

1. The lengths of two legs of a right triangle are 32 cm and 67 cm. What is the length of the hypotenuse?

2. The length of the hypotenuse of a right triangle is 65 yards. The length of one leg is 25 yards. What is the length of the other leg?

3. Find the length of the diagonal of a square whose sides measure 22 cm.

4. Find the length of the diagonal of rectangle whose sides measure 14 ft and 23 ft.

5. A ladder resting against the side of a building reaches 32 ft up the building. If the ladder is 40 ft long, how far from the building is the base of the ladder?

6. A ramp is used to reach the top of a staircase that is 10 ft above the ground. If the length of the ramp is 30 ft, how far from the staircase must the base of the ramp be placed?

7. Determine whether the following could be lengths of right triangles. Show your work

a. 3, 6, 9

b. 60, 156, 144

c. 56, 102, 105

d. 36, 48, 64

e. 15, 9, 12

f. 17, 31, 23

g. 28, 96, 100

**Open-Ended Question: Answer the following question on this piece or a separate piece of paper. Make sure as you answer the open-ended question that you show your work AND explain how you know you are doing the correct work. YOU MUST EXPLAIN WHAT YOU ARE DOING!!!**

A room in the shape of a rectangular prism is 12 ft long and 9 ft wide. The ceiling is 11 ft high.

- A. If an insect flew the greatest possible straight-line distance in the room, how far would it travel, to the nearest foot? (HINT: Think three-dimensionally. Use the figure below to help out with this problem.)
- B. How far would the insect travel if it flew at a diagonal along the long wall? The short wall?

